CLAIMS:

What is claimed is:

1. An apparatus for reading data, comprising:

a magnetic tape media contact surface configured to contact a magnetic tape media; and

a reduced sensitivity spin valve sensor, wherein the reduced sensitivity spin valve sensor senses an applied magnetic field from the magnetic tape media when the magnetic tape media passes by the reduced sensitivity spin valve sensor, and wherein the reduced sensitivity spin valve sensor has a sensitivity less than magnetic disk head spin valve sensors

2. The apparatus of claim 1, wherein the reduced sensitivity spin valve sensor has a sensitivity that is reduced by one of reducing a basic magnetic sensitivity of the spin valve sensor, increasing the flux carrying capacity of the spin valve sensor, and reducing a flux injection efficiency of the spin valve sensor.

3. The apparatus of claim 1, wherein the reduced sensitivity spin valve sensor has a sensitivity that is reduced from a sensitivity of the magnetic disk head spin valve sensor by increasing a thickness of a free layer of a magnetic disk head spin valve sensor.

4. The apparatus of claim 1, wherein the reduced sensitivity spin valve sensor has a sensitivity that is reduced from a sensitivity of the magnetic disk head spin valve sensor by increasing an effective anisotropy field

of a free layer in a magnetic disk head spin valve sensor.

5. The apparatus of claim 4, wherein the effective anisotropy field of the magnetic disk head spin valve sensor is increased by increasing a stiffness of a free layer of the magnetic disk head spin valve sensor.

6. The apparatus of claim 5, wherein the stiffness of the free layer is increased by using at least one permanent magnet stabilizing element to impart a stiffening magnetic field to the free layer.

7. The apparatus of claim 6, wherein the at least one permanent magnet stabilizing element is a cobalt-platinum-chromium magnet.

8. The apparatus of claim 5, wherein the stiffness of the free layer is increased by using an antiferromagnet to impart a stiffening magnetic field to the free layer.

9. The apparatus of claim 5, wherein the stiffness of the free layer is increased by using both an antiferromagnet and at least one permanent magnet stabilizing element to impart a stiffening exchange magnetic field to the free layer.

10. The apparatus of claim 3, wherein the thickness of the free layer is increased above 60A.

11. The apparatus of claim 3, wherein the thickness of the free layer is increased to between 90A and 120A, inclusively.

12. The apparatus of claim 1, wherein the reduced sensitivity spin valve sensor has a sensitivity that is reduced from a sensitivity of the magnetic disk head spin valve sensor by using a dual type spin valve sensor in which an input flux is distributed across two free layers.

13. The apparatus of claim 12, wherein the dual type spin valve sensor has four ferromagnetic material layers spaced from one another by three non-magnetic spacers.

14. The apparatus of claim 13, wherein an outer two of the four ferromagnetic material layers have fixed magnetization directions, and wherein an inner two of the four ferromagnetic material layers are free layers.

15. The apparatus of claim 1, wherein the reduced sensitivity spin valve sensor has a sensitivity that is reduced from a sensitivity of the magnetic disk head spin valve sensor by reducing the space between the spin valve sensor and a magnetic shield to thereby, reduce a flux injection efficiency of the magnetic disk head spin valve sensor.

16. The apparatus of claim 1, wherein the reduced sensitivity spin valve sensor has a sensitivity that is reduced from a sensitivity of the magnetic disk head spin valve sensor by providing two spin valve sensor elements

in a yoke structure of the head to thereby, distribute an input flux across the two spin valve sensor elements.

17. A method of using a spin valve sensor to read data from a magnetic tape media, comprising:

passing a magnetic tape media before a magnetic tape media head; and

sensing an applied magnetic field from the magnetic tape media using a spin valve sensor, the spin valve sensor having a reduced sensitivity for use with magnetic tape media.

18. The method of claim 17, wherein the spin valve sensor has a sensitivity that is reduced by one of reducing a basic magnetic sensitivity of the spin valve sensor, increasing a flux carrying capacity of the spin valve sensor, and reducing a flux injection efficiency of the spin valve sensor.

19. The method of claim 17, wherein the spin valve sensor has a sensitivity that is reduced by increasing a thickness of a free layer of the spin valve sensor.

20. The method of claim 17, wherein the spin valve sensor has a sensitivity that is reduced by increasing an effective anisotropy field.

21. The method of claim 20, wherein the anisotropy field is increased by increasing a stiffness of a free layer of the spin valve sensor.

22. The method of claim 21, wherein the stiffness of the free layer is increased by using at least one permanent magnet stabilizing element to impart a stiffening magnetic field to the free layer.

23. The method of claim 22, wherein the at least one permanent magnet stabilizing element is a cobalt-platinum-chromium magnet.

24. The method of claim 21, wherein the stiffness of the free layer is increased by using an antiferromagnet to impart a stiffening magnetic field to the free layer.

25. The method of claim 21, wherein the stiffness of the free layer is increased by using both an antiferromagnet and at least one permanent magnet stabilizing element to impart a stiffening exchange magnetic field to the free layer.

26. The method of claim 19, wherein the thickness of the free layer is increased above 60A.

27. The method of claim 19, wherein the thickness of the free layer is increased to between 90A and 120A, inclusively.

28. The method of claim 17, wherein the spin valve sensor has a sensitivity that is reduced by using a dual type spin valve sensor in which an input flux is distributed across two free layers.

29. The method of claim 28, wherein the dual type spin valve sensor has four ferromagnetic material layers spaced from one another by three non-magnetic spacers.

30. The method of claim 29, wherein an outer two of the four ferromagnetic material layers have fixed magnetization directions, and wherein an inner two of the four ferromagnetic material layers are free layers.

31. The method of claim 17, wherein the spin valve sensor has a sensitivity that is reduced by reducing a space between the spin valve sensor and a magnetic shield to thereby, reduce a flux injection efficiency of the spin valve sensor.

32. The method of claim 17, wherein the spin valve sensor has a sensitivity that is reduced by providing two spin valve sensor elements in a yoke structure of the head to thereby, distribute an input flux across the two spin valve sensor elements.